United States Environmental Protection Agency | Air and Radiation 6202J | EPA 430-N-96017 Winter 1997

EPA

Green Lights® & Energy Star® Buildings Update

■ PSAs ■ Brochures ■ Billboards ■

GREEN

■ Facility Tours ■ Newsletters ■

LIGHTS

■ Media Outreach ■ Videos ■

PARTICIPANTS

■ Employee Recognition ■ Events ■

COMMUNICATE

■ Newspaper Ads ■ Stickers ■

THEIR

■ Magazine Articles ■ Posters ■

SUCCESS

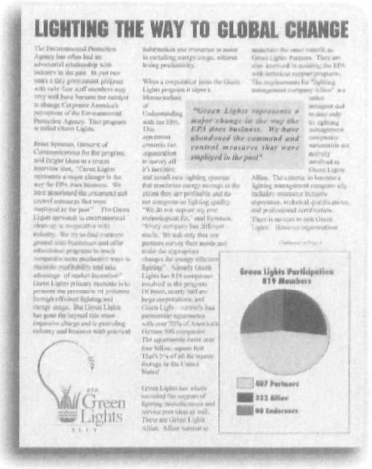
■ Pens ■ Premium Giveaways ■

401 M Street, SW (6202J), Washington, DC 20460
Energy Star Fax Line System • 202 233-9659
Green Lights/Energy Star Hotline 1-888-STAR-YES (1-888-782-7937) • Fax 202 775-6680

It's Showtime!

Participants use new and creative ways to publicize their Green Lights involvement

In addition to upgrading your lighting, it is important to let your employees and your community know about your pollution prevention efforts. This issue of the *Update* highlights what participants have done to promote the Green Lights Program and their efforts through articles, videos, public service advertisements, brochures, and unique uses of the Green Lights logo.


LIGHTING THE WAY TO GLOBAL CHANGE

"Green Lights represents a major change in the way the EPA does business. We have abandoned the command and control measures that were employed in the past"

Green Lights Participation
819 Members

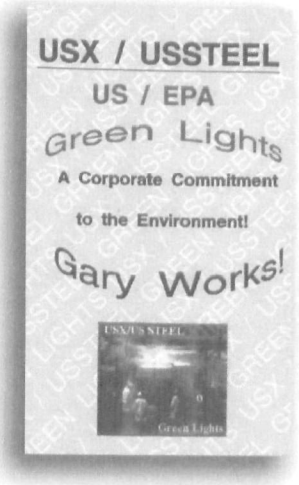
687 Partners
332 Allies
90 Endorsers

INNOVATIVE LIGHTING SERVICES

Innovative Lighting Services, 1995 Lighting Management Ally of the Year, developed an Ally of the Year insert for a company brochure that has been circulated to thousands of its current and potential clients in the Los Angeles area. The company has publicized its Green Lights involvement in other issues of its newsletter, *Bright Ideas.*

USX/US STEEL

Want to see firsthand how a large corporation successfully implemented Green Lights in one of its facilities? USX/US Steel produced a video showing how it implemented Green Lights at the Gary Works facility in Gary, IN. The video, "A Corporate Commitment to the Environment – Gary Works!" has been shown to other divisions of USX and used to help recruit Bethlehem Steel into the program. USX was not the only Partner to produce a Green Lights Video—the City & County of Denver and Larry's Markets also made videos to highlight their participation.



WE'RE BACK!!

As many of you know, the Federal budget crisis disrupted the printing and production schedule of the *Green Lights & ENERGY STAR BUILDINGS Update*.

This disruption inspired us to be creative in reaching out to program participants. As a result, we developed a fax version of the *Update*, now called the *Bulletin*, as well as a World Wide Web version. (You can see the *Update* on the Web at http://www.epa.gov/greenlights.html). The abbreviated fax *Bulletin* will continue to focus on the latest program news and upcoming events. The printed *Green Lights & ENERGY STAR BUILDINGS Update* will now be coming to you on a quarterly basis and will provide in-depth information about participant accomplishments and program developments.

Contents

The *Green Lights & ENERGY STAR BUILDINGS Update* is a free quarterly publication with a circulation of more than 20,000. Recipients of the *Update* include: Green Lights participants, program prospects, members of Congress, and interested members of the general public. **Receipt of this publication is not an indication that your organization is a participant.** To add your name to the subscription list, or to find out how to join Green Lights, call the toll-free Green Lights/ENERGY STAR Hotline at 1-888-STAR-YES (1-888-782-7937).

Although publication of all submissions is not guaranteed, the *Update* encourages Partners, Allies, and Endorsers to submit articles of interest and to provide input for future issues. Please keep in mind that EPA seeks only to promote energy efficiency and does not endorse any particular product or service. If your organization would like to submit material for publication in the *Green Lights & ENERGY STAR BUILDINGS Update*, please send materials to: *Update* Editor, EPA Green Lights (6202J), 401 M Street, SW, Washington, DC 20460; or fax to 202 233-9578.

NICATIONS SUCCESSES


What Color Are Your Lights?

TCE's Participation In Green Lights Program Aimed At Reducing Energy Consumption

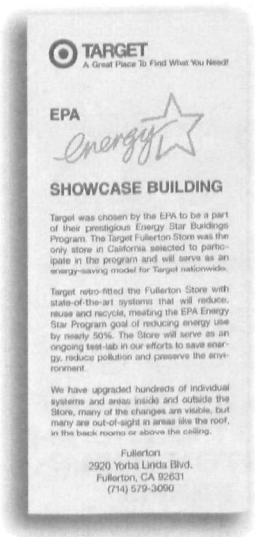
EPA Green Lights

HQ Has "Green Lights"

Five-Year Agreement

THOMSON CONSUMER ELECTRONICS

The 1995 Earth Day edition of *Inside Thomson,* Thomson Consumer Electronics' monthly employee newsletter, focuses on how Thomson is helping to create a greener future. Included are articles on Thomson's recycling, environmental health and safety programs, and its Green Lights involvement.


TARGET
A Great Place To Find What You Need!

EPA energy

SHOWCASE BUILDING

Target was chosen by the EPA to be a part of their prestigious Energy Star Buildings Program. The Target Fullerton Store was the only store in California selected to participate in the program and will serve as an energy-saving model for Target nationwide.

Target retro-fitted the Fullerton Store with state-of-the-art systems that will reduce, reuse and recycle, meeting the EPA Energy Star Program goal of reducing energy use by nearly 50%. The Store will serve as an ongoing test-lab in our efforts to save energy, reduce pollution and preserve the environment.

We have upgraded hundreds of individual systems and areas inside and outside the Store, many of the changes are visible, but many are out-of-sight in areas like the roof, in the back rooms or above the ceiling.

Fullerton
2920 Yorba Linda Blvd.
Fullerton, CA 92631
(714) 579-3090

TARGET

Target's Fullerton, CA store is an ENERGY STAR Showcase Building. This store has upgraded everything from lights to refrigeration equipment. To inform customers about the store's upgrades, Target has created a brochure which is available to all interested store visitors.

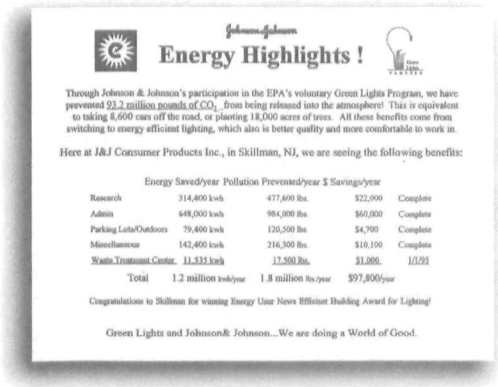
McDONALD'S

McDonald's quarterly environmental affairs newsletter, *Earth Efforts Express,* has included information that spreads the message about its Green Lights membership.

WESTINGHOUSE ELECTRIC CORPORATION

Tim Rumon, senior engineer and Westinghouse Electric Corporation's Green Lights implementation director had a bright idea to promote Green Lights—the Westinghouse Green Lights Pen. This pen is used to reward volunteers who have already shown a huge commitment to implementing the program.

JOHNSON & JOHNSON


Johnson & Johnson

Energy Highlights !

Through Johnson & Johnson's participation in the EPA's voluntary Green Lights Program, we have prevented 93.2 million pounds of CO_2 from being released into the atmosphere! This is equivalent to taking 8,600 cars off the road, or planting 18,000 acres of trees. All these benefits come from switching to energy efficient lighting, which also is better quality and more comfortable to work in.

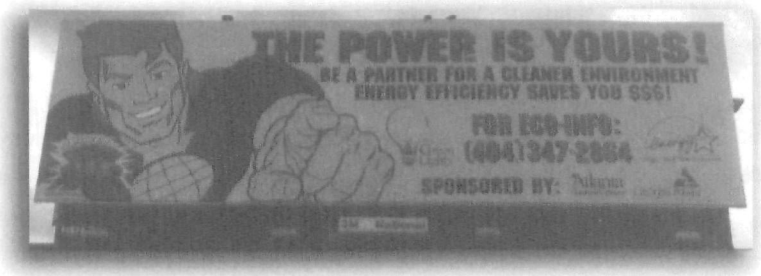
Here at J&J Consumer Products Inc., in Skillman, NJ, we are seeing the following benefits:

	Energy Saved/year	Pollution Prevented/year	$ Savings/year	
Research	314,400 kwh	477,600 lbs.	$22,000	Complete
Admin	648,000 kwh	984,000 lbs.	$60,000	Complete
Parking Lots/Outdoors	79,400 kwh	120,500 lbs.	$4,700	Complete
Miscellaneous	142,400 kwh	216,300 lbs.	$10,100	Complete
Waste Treatment Center	11,535 kwh	17,500 lbs.	$1,000	1/1/95
Total	1.2 million kwh/year	1.8 million lbs./year	$97,800/year	

Congratulations to Skillman for winning Energy User News Efficient Building Award for Lighting!

Green Lights and Johnson& Johnson...We are doing a World of Good.

Johnson & Johnson's *Green Lights Update* has been developed to communicate successful projects, important EPA information, technical lighting information, and increase the awareness level concerning the company's Green Lights activities. During Energy Week, the company also made color posters of the Energy Highlights charts to recognize employees' efforts at many Johnson & Johnson locations. Ten locations used these posters to publicize their efforts to employees and to the community.



TURNER BROADCASTING & GREATER ATLANTA CHAMBER OF COMMERCE

Turner Broadcasting System (TBS) and the Greater Atlanta Chamber of Commerce teamed up to help Superhero Captain Planet spread the word about Green Lights and ENERGY STAR with a billboard in midtown Atlanta. TBS is the producer of the environmentally-themed cartoon "Captain Planet and the Planeteers," making Captain Planet a great spokeshero to tell how Green Lights and ENERGY STAR are good for the environment and save participants money.


Pollution prevention at a profit

Blue and yellow make...

Green Lights PARTNER

CONSOLIDATED EDISON OF NEW YORK, INC.

Utility Ally, Consolidated Edison of New York, promoted Green Lights to its customers through a utility bill insert. The piece encouraged customers to join the program and included the Green Lights web address for additional information.


CUSTOMER NEWS

Summer and Your Con Edison Bill

BULLETIN BOARD

AMOCO

Amoco publicized its company-wide Green Lights savings of more than $718,000 annually in an article in its bi-weekly employee newsletter, the *Amoco Torch.*


ENVIRONMENTAL GREENPRINT

Make the Ultimate Home Improvement!

- Energy Saving and Healthy Home Tips
- Steps Home Depot Is Taking
- Green Shopping Ideas

We Care About the Environment

THE CITY OF PHILADELPHIA

The City of Philadelphia educated city employees and potential federal Partners at a special fair, Philadelphia Lights '94. The Municipal Energy Office held a seminar for employees to learn about Green Lights and understand what they can do to reduce energy usage.

THE HOME DEPOT

The Home Depot's *Environmental Greenprint* is distributed to approximately 40,000 customers a week per store, in 350 stores nationwide. The newspaper highlights the store's environmental practices and products.

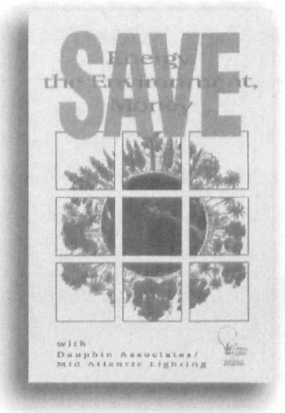

Environmental Action at the Stonyfield Yogurt Works

When cooking with yogurt:

- Better not overheat it.
- Better not heat it up too quickly.
- Better not stir it too vigorously.
- Better not wait too long to use it.

STONYFIELD FARMS

Stonyfield Farms in Londonderry, NH included their environmental actions in the Spring/ Summer 1995 issue of their biannual newsletter, *Moos from the Farm.*


SAVE

with Dauphin Associates/ Mid Atlantic Lighting

DAUPHIN ASSOCIATES/ MID ATLANTIC LIGHTING

Dauphin Associates/Mid Atlantic Lighting in Harrisburg, PA, produced a brochure about its new Energy Solutions Group, which provides clients with solutions to help save energy and save money in the process. This brochure was part of a mailing to current and prospective clients. The brochure contains a business reply card that interested parties can send back for information about Green Lights, lighting surveys, or company information.

ERICKSON'S DIVERSIFIED CORPORATION


Natural Resource Conservation and Environmental Management Awards and Partnerships:

WASTE WISE

Erickson's is a Minnesota Waste Wise member committed to reducing waste to our stores. Our company is going beyond standard recycling and finding alternatives to land filling of food waste and waxed corrugated cardboard. We also supply our customers with better environmental choices such as organically grown foods and less harmful cleaning products. Our stores serve as an informational channel to consumers about environmental issues.

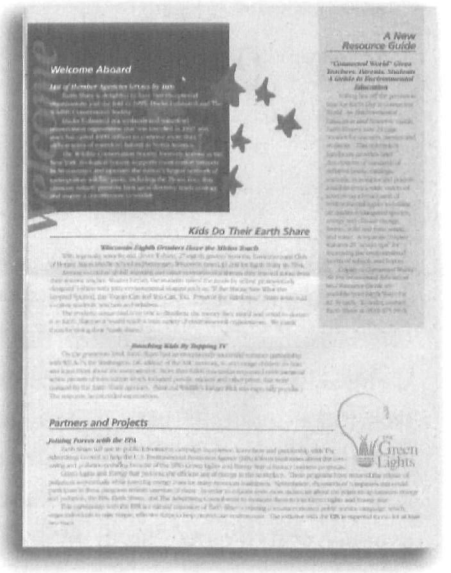
EPA Green Lights PARTNER

Erickson's is a U.S. EPA Green Lights Partner reducing energy use in our lighting systems. Since 1994 changing to more energy efficient lights in nine of our stores has cut energy requirements for lighting in half and reduced overall energy usage by 10-20%.

WISCONSIN ENVIRONMENTAL WORKING GROUP

The Wisconsin Environmental Working Group and Wisconsin Manufacturers & Commerce have recognized Erickson's Diversified Corporation as a 1995 Wisconsin Business Friend of the Environment Award Winner. The award recognizes companies that have demonstrated leadership in environmental protection.

Erickson's chose two high-profile ways to spread the message about its environmental commitment. The retailer produced the "More Bright Ideas 4 the Environment" for employees and customers at its Redwing and Northfield stores. The brochure answers basic questions about energy-efficient lighting, explains the lighting upgrade process, and outlines what customers can do to help the environment. Erickson's also placed a full-page advertisement about its environmental programs in the *Hudson Star-Observer* in Hudson, WI.



EARTH SHARE

Earth Share will use its public information campaign experience in partnership with the Advitising Council to help EPA inform businesses about the benefits of Green Lights and ENERGY STAR Programs. Earth Share included information about this partnership in *The Sharing News – The Earth Share Report.*

ARLINGTON HOSPITAL

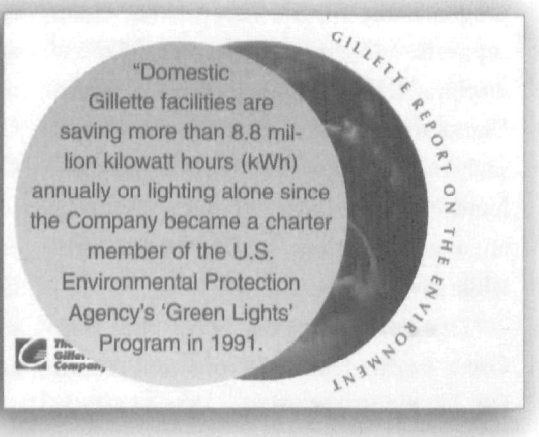
Arlington Hospital in Arlington, VA has started an intensive Green Lights promotional campaign that focuses on the cost savings from recent upgrades in its main facility and new ambulatory care center. Green Lights worked with Arlington to produce a poster highlighting the $300,000 the healthcare facility expects to save by participating in Green Lights. The posters will be hung throughout the hospital.

ALBERTSON'S

Albertson's, an Idaho-based supermarket chain, highlighted its Green Lights participation in its employee magazine *Albertson's Today.* Albertson's was a member of the Green Lights "Biggest and Brightest" club for its excellent lighting upgrade work.

THE GILLETTE COMPANY

Green Lights is only one facet of the Gillette Company's commitment to environmental protection. The company's corporate "Report on the Environment" is produced annually and distributed to employees, shareholders, and members of the media.



IN THE SPOTLIGHT

Participant Promotions Pay Off

Best Promotions Contest recognizes outstanding communications materials

Each year, EPA receives many creative communications pieces through the Green Lights Partner/Ally of the Year Contest, including videos, tote bags, t-shirts, mouse pads, billboards, brochures, Web pages, and newspaper ads. To recognize participants for their external and internal promotions, EPA created the Best Promotion Award to showcase the most outstanding communications pieces developed by Partners and Allies. Awards were given for best internal promotion or employee education effort and best external promotion for educating the public about Green Lights. Winners were chosen by a contest held during the 1996 Atmospheric Pollution Prevention Division (APPD) Forum.

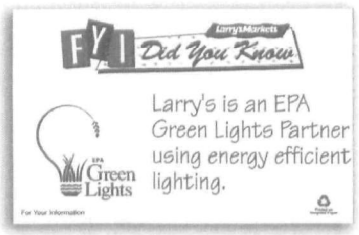
The following winners were chosen:

Larry's Markets won the Best Green Lights Internal Promotion Award for putting the Green Lights logo and environmental program information on its paper and plastic shopping bags. Either choice allows Larry's Markets customers the chance to learn about Green Lights and the many other environmental programs the Seattle supermarket chain supports. In addition, Larry's Markets displays "F.Y.I." posters explaining Green Lights to customers in every store. Signs such as these allow customers to see firsthand how energy-efficient lighting enhances lighting quality and clarity while saving money.

Target Stores won the Best Green Lights External Promotion Award for its many materials. Target chose Earth Day to reopen its remodeled Fullerton, CA store, the only California store selected as an ENERGY STAR Showcase Building. Target employees wore ENERGY STAR shirts while distributing pens, balloons, and tote bags to customers (all emblazoned with the ENERGY STAR logo). Store guides detailing all energy-efficient upgrades and improvements were distributed to the public. Target also produced a full-color brochure.

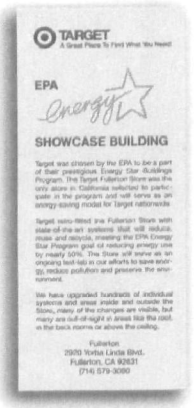
The University of Texas M.D. Anderson Cancer Center was awarded Best Green Lights Employee Education for integrating the Green Lights logo onto computer mouse pads and key chains and distributing them to all hospital staff. The mouse pads and key chains encourage employees to lend a hand in the hospital's pollution prevention efforts.

Compaq Computer Corporation won Best Green Lights Employee Education for its company brochure. Participation in Green Lights and ENERGY STAR Office Equipment allows multinational companies like Compaq to teach facilities abroad how they too can apply energy-efficient lighting and technologies and help the environment. "A Company Committed to Environmental Care and Protection" is a brochure that focuses on the many benefits of energy efficiency. It was distributed to all Compaq employees, customers, and stockholders in Europe, the Middle East, and Africa.

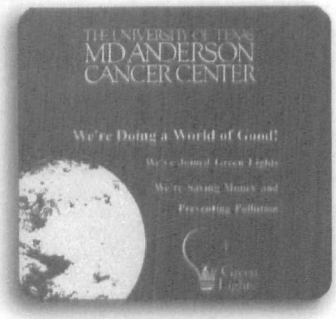


Larry's Markets store posters

Target's ENERGY STAR Buildings brochure



Excerpt from Compaq's company brochure



M.D. Anderson Cancer Center's Green Lights mouse pad.

TIP OF THE MONTH

Measuring Light Levels

Here are some guidelines to follow before and after a trial upgrade

Before upgrading the lighting products in your facilities, you are strongly encouraged to install limited quantities of the potential products in a trial upgrade. You should evaluate the upgrade's performance by assessing the impact on light level, energy consumption, hours of operation, and occupant acceptance. This month's tip addresses the proper method for evaluating the performance of any upgrade lighting product in delivering illumination to the task.

To accurately assess light levels before and after a trial upgrade, follow the steps outlined below:

1. Start with new lamps and clean fixtures. Light output can be affected by age of the lamps and dirtiness of the fixture. The baseline light level readings should be made only after the following steps have been taken:

- Clean the existing fixtures in the trial installation area.
- Use new lamps (same wattage and type used in existing system); allow for a 100-hour "burn-in" period before taking measurements.

2. Allow time for system warm-up. Most installations take some time to reach a stable condition after switch-on. Allowing 30 minutes between switch-on and the first measurement is recommended.

3. Eliminate daylight effects. Daylight and sunlight can produce very large variations in lighting. For best results, conduct the survey after dark or with the blinds closed.

4. Check supply voltage. Light output of most lamps is directly affected by the supply voltage. At the time of the survey, measure the supply voltage to verify that it is not below acceptable levels (check with your electric utility).

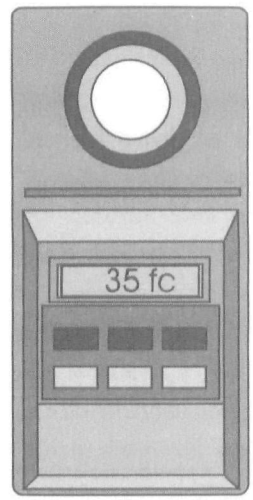
5. Properly position the illuminance meter. When making light level measurements, put the illuminance meter on the work surface, and be careful not to shadow the meter by holding it close to your body. Also, be careful to avoid reflections from clothing.

6. Record light level readings. Use the illuminance meter to measure the footcandles at a variety of locations:

- Measure light levels at specific task locations.
- Check uniformity of illumination by measuring light levels at the work plane height (usually 30" above the floor) at various locations including directly under and between fixtures, adjacent to walls, and in corners.
- Measure light levels on vertical task surfaces (if applicable); evaluate aesthetics of resulting light levels on walls (check for shadows on walls due to fixture shielding angle).

Be certain to record the *locations of* readings for the baseline case so you can repeat the procedure when evaluating the trial installation. (Adhesive labels can be used to mark measurement locations and corresponding values.)

7. Calculate average maintained light level. The average light level measured in a room should be corrected to account for lamp and dirt depreciation effects to determine the average *maintained light* level. The light loss factor to be applied to your initial readings is the product of the lamp lumen depreciation (LLD) and the luminaire dirt depreciation (LDD). A typical value for LLD is 0.87 for cool-white lamps and 0.91 for triphosphor lamps; a typical value for LDD for lay-in troffers in smoke-free office buildings is about 0.87. Multiply the LLD factor by the LDD factor to determine the total light loss factor (typically 0.76 for base-case troffers and 0.79 for upgraded troffers). Multiply your initial light level readings by the light loss factor to determine the average maintained light level, and compare this value with your target light level. Refer to the Illuminating Engineering Society's *Lighting Handbook* for recommended light levels and specific light loss factors.



Use a light meter to measure the footcandles delivered to work surfaces.

8. Repeat the above procedure after the trial installation is complete. The next set of measurements should be performed under the *same* conditions as in the base case.

GREEN LIGHTS ON THE GO

Hitching a Ride

Green Lights, ENERGY STAR Buildings, and ENERGY STAR Office Equipment get a free ride on mass transit systems

The Green Lights and ENERGY STAR Buildings Programs have benefitted from spreading the word about energy efficiency on mass transit systems around the country. Here are some highlights:

Chicago

EPA has teamed up with charter ENERGY STAR Buildings Partner, the City of Chicago, to promote energy efficiency and pollution prevention among city businesses. A central component of the effort includes a public service campaign entitled "Improving the Environment for Doing Business in Chicago" that highlights Chicago-based Fortune 500 corporations, the savings they have made through membership in EPA's programs, and their logos displayed against an outline of the Chicago skyline. Through the donations of space from Transportation Media and TDI, the campaign will be run on dioramas and king size posters at O'Hare and Midway airports and on (Chicago Transit Authority) CTA 'el' and subway station platforms. Local business journals, such as *Crain's Chicago Business,* have also offered to include the advertisements. The campaign will run from August 1996 through the end of the year and will provide an important backdrop to other events planned to coincide with the Democratic Convention hosted in the city.

Atlanta

In cooperation with Metropolitan Atlanta Rapid Transit Authority (MARTA) the Green Lights Program got a promotional free-ride in 1995. MARTA, a Green Lights participant since 1993, featured PSAs highlighting the program and several other Atlanta-area Green Lights participants. PSAs ran for several months in MARTA trains, on buses, and on signage at the Peachtree Center station.

Houston

When the Metropolitan Transit Authority of Houston (Houston METRO) joined the Green Lights program in 1995, they were pleased that their buses could serve as a platform for spreading the energy efficiency message. As part of an ongoing effort to promote the program, EPA approached Houston METRO about featuring Green Lights PSAs in the 800 buses in their transit system. Through a special arrangement with the Houston METRO, EPA designed posters featuring the outline of METRO buses and the logos of Houston Green Lights participants that have "climbed aboard" for pollution prevention.

Washington, D.C.

In conjunction with the Washington Metropolitan Area Transit Authority (Metro) and Maryland's Mass Transit Administration, ENERGY STAR compliant computers got a free ride. The two transit offices donated space to feature a transit PSA campaign encouraging the general

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Chicago Green Lights and ENERGY STAR Buildings PSAs.

Green Lights PSA on Atlanta's MARTA.

COMPLETED UPGRADES

Halliburton Takes the Lead

From the North Shore of Alaska to the Florida Keys, the Halliburton Company has turned its Green Lights pledge into action, taking major steps to upgrade its 10 million square feet. Headed by CEO Dick Cheney, former U.S. Defense Secretary, Halliburton has moved beyond typical Green Lights upgrades and instituted a comprehensive internal communications campaign to spread the word about Green Lights.

Why did this company so enthusiastically embrace Green Lights? After initial interest by company executives, Halliburton completed a pilot program, "ran the math, and (the program) looked like a good deal," according to Richard Laxen, Halliburton's project manager. "It made sense, so we jumped in with both feet." The company then established a Green Lights team to track implementation, communication, and financial aspects of the program. With help from Green Lights Ally Sylvania Lighting Service, Halliburton has already upgraded more than 3.6 million square feet and plans to complete its upgrades next year.

Tracy Handke, who works on Halliburton's internal communications for Green Lights, emphasized that "the energy savings is greatest at sites where employees buy into the program." To ensure continuous support among employees, Halliburton uses articles, posters, e-mail, and a slide show to inform staff about anticipated changes and benefits. Both the company's quarterly newsletter and the individual site newsletters regularly publish articles about Halliburton's participation and progress in Green Lights. These outreach efforts provide schedules for surveying and upgrading and describe the energy and financial savings associated with those upgrades.

"[Green Lights] made sense, so we jumped in with both feet."

Halliburton's upgraded facilities enjoy a healthy return on investment and presently save more than $1.1 million per year. The company's hard work also had a positive impact on the environment, preventing almost 30 million pounds of CO_2 emissions.

continued from page 8

public to: Look For It, Ask For It, Buy It. Thanks to these organizations, commuters on Metro buses and trains and MARC trains have been greeted daily with a simple, solid message about the availability of energy-efficient office equipment. In addition to computers, ENERGY STAR labeled office equipment includes copiers, printers, and fax machines that save users money by going to sleep when not in use.

Also, as part of a targeted regional marketing program by EPA, Metro displayed Green Lights PSAs in Metro stations and on buses around the Washington, D.C. area, reaching thousands of commuters every day.

Houston's METRO PSA program

Green Lights and ENERGY STAR labeled Computers PSAs on Metro buses in the Washington, D.C. area

ALLY CORNER

Allies, Get Your Motors Runnin'

Creative marketing helps Allies profit from Green Lights participation

How often do you get a client who says "I want to maximize the lighting efficiency in 90 percent of my building" and means it? If the answer is "not often enough," perhaps it's time to flip on your Green Lights marketing high-beams and start recruiting new participants. That's because Green Lights Partners agree to upgrade 90 percent of their facilities with energy-efficient lighting within a five-year period. And guess who may be in the best position to help them with surveying, upgrading, and reporting to EPA? Potentially, the Ally that brought them on-board.

Headin' Down The Highway

At the APPD 1996 Forum in Washington, D.C., Allies brainstormed ways that EPA could help them better market the Green Lights philosophy. Everyone agreed that you'll have your greatest marketing success when you target the right message to your audience.

EPA heard that Allies want an effective marketing tool that focuses on energy-efficient economics and one that is easy to use for marketing calls. The marketing tools determined to be the most helpful were:

- A desktop flipchart presentation that highlights the benefits of joining Green Lights.
- A leave-behind brochure to reinforce key points from the flipchart presentation. The brochure can be easily personalized with your company logo.

These materials are currently under production and will be available later this Fall.

Lookin' for Adventure

But you don't need to idle in neutral until the above marketing pieces are completed. Other new pieces are available right now. As you move your clients closer to their destination of profitable pollution prevention, you'll want to bring along a few of these tools for the ride:

■ **The Green Lights Ally Directory** includes your company's contact information, along with a matrix of products and services your company offers. The first edition was distributed in September to new Partners and to Partners who have not yet completed their upgrades.

■ **The Green Lights Ally Toolkit** and the **Green Lights Ally Presentation Notebook** contain all the facts, figures, and marketing materials you need to convince your potential clients that maximizing the energy efficiency of their lighting systems is a sound investment. The toolkit also provides valuable marketing tips to help you increase your business through Green Lights.

■ **Ally/Partner case studies** highlight how Allies have helped Green Lights Partners maximize energy efficiency through lighting upgrades. These case studies were recently redesigned in both format and content to better meet Allies' marketing needs. To help Allies receive the recognition they deserve, the case studies will be part of media kits distributed to trade journals. The next call for case study candidates is likely to take place next year...so stay tuned.

Allies Who Are Already Cruisin'

While EPA-produced materials are effective Green Lights marketing tools, many Allies develop their own customized materials to promote the program and deliver their own specific messages.

■ OSRAM Sylvania gets the Green Lights message out by LIGHTmobile™, a 48-foot, 18-wheel, traveling interactive classroom that reaches 150 cities in 40 states annually. LIGHTmobile makes regular stops at trade shows, industrial and commercial distributors, schools, and Earth Day events, educating people about Green Lights and energy-efficient technologies.

■ Parke Industries produced a video featuring its work with Green Lights Partner Southern California Gas Company. The presentation details how a good working relationship between an Ally and a Partner produced an excellent lighting upgrade.

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OSRAM Sylvania's LIGHTmobile takes the Green Lights message on the road.

REGIONAL FOCUS

Green Lights in Action

Ashland Chemical Company hosts tour of its facilities as part of Lighting Upgrade Workshop

Lighting Upgrade Workshop attendees saw completed Green Lights upgrades first hand, courtesy of Ashland Chemical Company. As part of the Columbus, OH workshop, Ashland hosted a tour of its Dublin, OH world headquarters. Twenty-seven workshop attendees visited the Dublin complex to see and learn about the company's successful Green Lights implementation.

The event included a presentation by Gary Allen, Ashland Chemical's Green Lights coordinator, on how the company developed its Green Lights upgrade program. According to Allen, Ashland Chemical has surveyed and created implementation plans for its 87 facilities across the United States. "Effective communication was a critical part of the program," said Allen. "We used a Quality Plus team to develop an overall plan for introducing Green Lights and its benefits to all company facilities, distributing and conducting surveys, and providing implementation reports to each facility."

Dick Garling, manager of Office and Building Services, led a tour of the company's Administration Building and Technical Center. Upgrades in progress include the replacement of T12 fluorescent tubes and magnetic ballasts with T8 tubes and electronic ballasts. Ashland is also reducing the number of ballasts and fixtures by 50 percent while maintaining a high quality of light. The company is installing motion sensors in conference rooms and laboratories that have either low or intermittent utilization. "It was important to educate our employees on energy-efficient lighting and tell them about the lighting changes before actual implementation. We wanted everyone to understand the purpose and benefits of the new lighting systems," said Garling. He also pointed out other energy-saving projects that the company has implemented including energy-efficient chillers and an energy management system. Ashland Chemical estimates that its lighting upgrades will reduce CO_2 emissions by about 10 million pounds annually.

Ashland Chemical's Dublin, OH, headquarters.

Focus on Teamwork

NYNEX recognizes its Green Lights implementation team

The NYNEX Corporation in New York, NY recently held a breakfast recognition ceremony to honor its lighting upgrade team for their dedication and teamwork.

Edward J. Linky from the EPA Region II Air Programs Branch was a keynote speaker. All members were awarded rechargeable flashlights engraved with "NYNEX-1995 Green Lights Recognition" for their efforts which are saving the corporation more than $3 million annually.

NYNEX has already installed energy-efficient lighting in more than 300 buildings, representing 15 million square feet of office space. With these enhancements, NYNEX is reducing its energy requirements by 24 million kilowatt-hours per year. "The NYNEX Green Lights program has been a success because of the cooperative efforts of our real estate department and Green Lights Allies," said Harlan Pincus, staff director of NYNEX Environmental Policy. NYNEX team members served as project managers for the upgrades because NYNEX has so many facilities. Team members selected facilities to be surveyed, arranged financing, and performed all other internal activities, explained Pincus. Green Lights Allies were used to perform surveys, upgrade buildings, and complete upgrade reports.

Team members recognized for their efforts included: Paul Belard, Don Boos, John Calarco, Bob Collins, John MacGowan, Don McManus, Suresh Manchanda, Harlan Pincus, Don Shepard, and Peter Stark.

HEALTHCARE FOCUS

A Healthy Dose of Recognition

Columbia/HCA and VA Medical Centers honored for their pollution prevention efforts

Columbia/HCA Healthcare Corporation and several Veterans Affairs Medical Centers were recognized by Assistant Administrator, EPA Office of Air and Radiation Mary Nichols and three prominent healthcare associations—the American Hospital Association, the Federation of American Health Systems, and the Council for Teaching Hospitals—for joining Green Lights.

"Columbia is focused on providing our patients with quality care, cost-effectively," said Richard L. Scott, Columbia's president and chief executive officer. "Our participation in Green Lights will provide our hospitals with better lighting while containing costs and conserving energy for the communities we serve."

Columbia/HCA is the largest healthcare provider to participate in Green Lights, joining more than 275 hospitals and medical centers who have enrolled in the program to date. Columbia will achieve a projected 35 to 40 percent reduction in electricity costs by upgrading its lighting. Anticipated savings for the upgrades of Columbia's 700 participating hospitals and medical centers exceeds $25 million annually.

Richard L. Scott, CEO of Columbia/HCA receives a certificate of recognition from Mary Nichols, Assistant Administrator, EPA Office of Air & Radiation. Also in attendance were Richard Wade of the AHA, Arnie Bierenbaum and Alan Maurer of the U.S. Veterans Affairs Medical Centers, Richard Pell of the VA-Martinsburg, Campbell Thomson of the Federation of American Health Systems, and Linda Fishman of the Association of American Medical Colleges.

Richard H. Wade, senior vice president for the American Hospital Association (AHA), was also on hand to endorse Green Lights and recognize Columbia HCA's involvement. "By joining the Green Lights Program, Columbia has shown great leadership in promoting energy efficiency. With more than 700 Columbia facilities involved, it is the kind of work that results in a real benefit to these communities," said Wade. "As a strong Endorser of the program, the AHA is encouraging all of its members to follow Columbia's lead."

Alan Maurer, director of field support for the U.S. Veterans Affairs Medical Centers was also present to announce the participation of several VA Medical Centers. Participating centers include Martinsburg, WV; Richmond, VA; Battle Creek, MI; Indianapolis, IN; Seattle; New Orleans, LA; and West Los Angeles, CA.

continued from page 10

■ Honeywell, Inc. created a flipchart that its sales representatives use to incorporate Green Lights into their marketing presentations. The flipchart highlights "environmental protection at a profit," an aspect of Green Lights that Honeywell knew would appeal to its clients. Use of the charts along with other marketing strategies and tools has enabled Honeywell to recruit at least eight new Green Lights Partners.

Green Lights can play a role in all marketing efforts. Steve Factor, senior vice president of Innovative Lighting Services says, "Green Lights is an important part of every presentation. This includes not only our proposals and bids, but press releases, published articles, newsletters, corporate profiles, brochures, seminars, and trade shows."

The Ally Hotline: Mechanics in Your Corner

And don't forget that help is just a phone call away. In fact, using the Green Lights Ally Hotline to its fullest potential is often a precursor to an Ally's success. New materials are regularly added to an already extensive list of technical and marketing support tools. Contact the Green Lights Ally Hotline toll-free at 1-888-STAR-YES (1-888-782-7937) to order the right support material for your marketing efforts.

GREEN LIGHTS IMPLEMENTATION REPORT

OMB # 2060-0255 Exp. 3/31/96

☐ **SURVEY REPORT** *(fill in sections 1,2,4,6, and 12 below)*

☐ **COMPLETED PROJECT REPORT** *(fill in sections 1-12 below)*

Date: _____

Page _____ of ____

(attach additional pages as needed)

1. FACILITY INFORMATION

Company Name:		Facility Manager:	
Facility Name:		Telephone No./FAX No.	
Facility address:		Total Floorspace for this Facility:	sq.ft.
City/St./ZipCode		Floorspace included in this report:	sq.ft.
Facility type*	New Construction? Yes No	Is this the FIRST report sent to EPA for this floorspace?	Yes No

2. LIGHTING FIXTURES BEFORE UPGRADE *(*use codes on back)*

Fixture Type*	Fixture Quantity	Lamp Type*	Lamp Wattage	Lamps/ Fixture	Ballast Type*	Lamps/ Ballast	Wattage per Fixture	Lighting hours/year

3. LIGHTING FIXTURES AFTER UPGRADE *(*use codes on back)*

Upgrade Type*	Fixture Type*	Fixture Quantity	Lamp Type*	Lamp Wattage	Lamps/ Fixture	Ballast Type*	Lamps/ Ballast	Wattage per Fixture	Lighting hours/year

4. LIGHTING CONTROLS BEFORE UPGRADE

Type 1*	Quantity	Type 2*	Quantity	Type 3*	Quantity

5. LIGHTING CONTROLS AFTER UPGRADE

Type 1*	Quantity	Type 2*	Quantity	Type 3*	Quantity

6. MAINTENANCE METHODS BEFORE UPGRADE

Group relamping? Yes No Fixture cleaning? Yes No

7. MAINTENANCE METHODS AFTER UPGRADE

Group relamping? Yes No Fixture cleaning? Yes No

8. COMMENTS

9. PROJECT COSTS

Survey	$
Administrative	$
Materials	$
Installation Labor	$
Disposal/Recycling Costs:	$
Other Costs	$
Total Project Cost	$
Rebates/Grants	$

10. LIGHTING SAVINGS

Lighting Load Reduced	kW
Electricity Reduction	kWh/yr
% Lighting Savings	%
Energy Cost Savings	$/yr
Internal Rate of Return	%

11. IMPLEMENTATION METHODS:

Survey/Analysis*	
Equipment Provider*	
Installation Method*	
Financing Method*	

** use codes on the back for these entries*

12. SIGNATURE

Are you? GL Implementation Director Facility Manager Other

Send to: Maria Theesen, Green Lights, US-EPA 6202J, 401 M St. SW, Washington DC 20460 , or FAX to (202) 233-9569. For questions, call the Green Lights technical hotline: 202-775-6650

6200 (11/28/94)

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GREEN LIGHTS IMPLEMENTATION REPORT CODES

Facility Type

1000 Office
1001 Warehouse
1002 Industrial/Manufacturing
1003 Retail sales
1004 Health Care
1005 Lodging (hotels, dormitories etc.)
1006 Assembly (churches, auditoriums, etc.)
1007 Education (classrooms)
1008 Food sales and service
1009 Parking Garage
1010 Laboratory
1011 Outdoor

Fixture Type

13 Fluorescent- commercial- no lens
14 Fluorescent- commercial-clear lens
15 Fluorescent- commercial-translucent lens
16 Fluorescent - deep cell louver
17 Fluorescent - small cell louver
18 Fluorescent- industrial-open fixture
19 Fluorescent- industrial-enclosed fixture
20 Incandescent- downlight ("can")
21 Incandescent-spotlight/floodlight
22 Incandescent-decorative/sconce
23 Incandescent-pendant fixture
24 Incandescent-general illumination
25 Incandescent-exterior/landscape
26 Incandescent - track lighting
27 HID-outdoor-cobra head
28 HID-outdoor-shoe box
29 HID-outdoor-wallpak/flood
30 HID-outdoor-landscape
31 HID-outdoor-sports lighting
32 HID-indoor-high bay
33 HID-indoor-low bay
34 HID-indoor-recessed commercial
35 HID-indoor-sports lighting
36 Exit sign-incandescent
37 Exit sign-fluorescent
38 Exit sign-LED
39 Exit sign-electroluminescent
40 Exit sign- tritium
41 Exit sign- luminescent
42 Indirect

Installation by

2030 in-house staff
2031 contractor
2032 utility

Lamp Type

54 T-8
55 T-10
56 T-12 Energy Saving
57 T-12 Cathode cut-out
58 T-12 High Lumen
59 T-12 Standard
60 T-12 High Output (800ma)
61 T-12 VHO (1500ma)
62 T-17 VHO (1500ma)
63 T-5 single ended
64 Compact twin-tube
65 Compact quad-tube
66 Compact-integrated ballast
67 Compact-circular
68 Incandescent-general service (A, PS,T)
69 Incandescent-Reflector (R, PAR, ER)
70 Incandescent-decorative
71 Halogen-general service
72 Halogen-reflector (R,PAR, MR)
73 Halogen-tubular
74 HID-mercury vapor
75 HID-metal halide
76 HID-high pressure sodium
77 HID-white-HPS
78 Low pressure sodium
79 T-12 Slimline

Ballast Type

80 Fluorescent-old standard magnetic
81 Fluorescent-efficient magnetic
82 Fluorescent-hybrid/cathode cutout
83 Fluorescent-standard electronic
84 Fluorescent-integrated electronic
85 Fluorescent-extended output electronic
86 Fluorescent-partial output electronic
87 Fluorescent-dimming electronic
88 Fluorescent-step dimming electronic
89 Fluorescent-HO standard magnetic
90 Fluorescent-HO (800ma) electronic
91 Fluorescent-VHO standard magnetic
92 Fluorescent-compact magnetic
93 Fluorescent-compact electronic
94 HID-magnetic
95 HID-electronic
96 Fluorescent-HO efficient magnetic
97 Fluorescent-VHO efficient magnetic

Upgrade Type

110 Relamp only
111 Delamp only
112 Relamp and reballast
113 Specular reflector/delamp
114 Reflector/Reballast
115 New Lens/Reflector/Reballast
116 New lens/louver
117 New fixture
118 Convert Incand. to Fluorescent or HID
119 Task Lighting

Control Type

100 Manual switching
101 Manual dimming
102 Occupancy sensor
103 Timed switching
104 Timed dimming
105 Daylight switching
106 Daylight dimming
107 Panel level dimming
108 Panel level EMS
109 Power reducer

Survey/Analysis by

2010 in-house personnel
2011 independent consultant
2012 electrical contractor
2013 utility representative
2014 equipment supplier
2015 lighting management company
2016 energy services company
2017 Green Lights Surveyor Ally
2018 Architect
2019 Lighting Designer
2024 Electrical Distributor

Equipment Provided by

2020 lighting equipment supplier
2021 lighting management company
2022 utility
2023 contractor

Financing by

2040 internal funds
2041 conventional loan
2042 utility
2043 lease/lease-purchase
2044 shared savings
2045 other

POLLUTION PREVENTION

You may want to estimate the pollution prevention of this project for your own use. Use the following formulas and factors:

CO2:	kWh/yr saved	x	emission factor	=	lbs/yr
SO2:	kWh/yr saved	x	emission factor	=	g/yr
NOx:	kWh/yr saved	x	emission factor	=	g/yr

EPA Regional Emission Factors (see note below)

REGION 1: CT, MA, ME, NH, RI, VT			
Emission per kWh saved:	CO2 1.1	SO2 4.0	NOx 1.4
REGION 2: NJ, NY, PR, VI			
Emission per kWh saved:	CO2 1.1	SO2 3.4	NOx 1.3
REGION 3: DC, DE, MD, PA, VA, WV			
Emission per kWh saved:	CO2 1.6	SO2 8.2	NOx 2.6
REGION 4: AL, FL, GA, KY, MS, NC, SC, TN			
Emission per kWh saved:	CO2 1.5	SO2 6.9	NOx 2.5
REGION 5: IL, IN, MI, MN, OH, WI			
Emission per kWh saved:	CO2 1.8	SO2 10.4	NOx 3.5
REGION 6: AR, LA, NM, OK, TX			
Emission per kWh saved:	CO2 1.7	SO2 2.2	NOx 2.5
REGION 7: IA, KS, MO, NE			
Emission per kWh saved:	CO2 2.0	SO2 8.5	NOx 3.9
REGION 8: CO, MT, ND, SD, UT, WY			
Emission per kWh saved:	CO2 2.2	SO2 3.3	NOx 3.2
REGION 9: AZ, CA, HI, NV, Guam, Am Samoa			
Emission per kWh saved:	CO2 1.0	SO2 1.1	NOx 1.5
REGION 10: AK, ID, OR, WA			
Emission per kWh saved:	CO2 0.1	SO2 0.5	NOx 0.3

Note: State pollution emission factors are aggregated by EPA region. Factors for U.S. territories are national average emission factors. See the Green Lights Lighting Upgrade Manual.

TECH TALK

Less Is More

Maximizing energy savings with reduced-wattage electronic ballasts

The demand for reduced-wattage or "partial-output" electronic ballasts has been increasing steadily as Green Lights participants seek to maximize energy savings. Operating at the same high efficacy as other electronic ballasts, these ballasts save more energy by delivering specified reductions in both light output and energy consumption.

Why consider reduced-wattage electronic ballasts?

Now that most ballast manufacturers offer a selection of electronic ballasts with various light output options, specifiers can select ballasts with the appropriate output that will most closely meet the recommended light level. Refer to the Illuminating Engineering Society of North America for task-specific illuminance recommendations.

What are common applications of reduced-wattage electronic ballasts?

There are several applications where reduced-wattage electronic ballasts can be applied:

Task/Ambient Lighting: By providing compact fluorescent task lights at office work stations, the illumination required from the overhead lighting system is significantly reduced. In some cases, delamping alone will not reduce light levels to the 20-30 footcandles recommended for ambient (non-task) lighting. Reduced-output electronic ballasts can lower the light level while improving visual comfort.

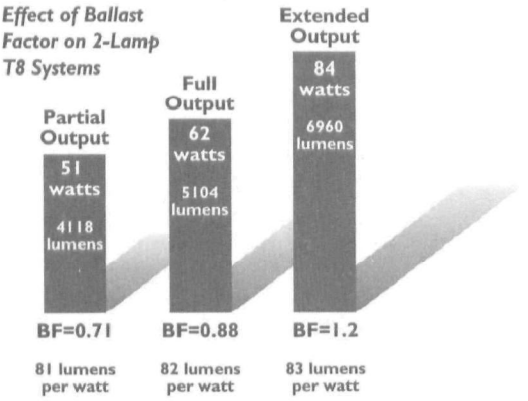
Alternative to Delamping: Particularly with parabolic louver fixtures, delamping can result in unfavorable luminaire appearances. The use of reduced-wattage electronic ballasts can maintain uniform brightness across the entire luminaire while providing the appropriate amount of illumination on task surfaces.

Maximizing Efficiency: Reduced-wattage electronic ballasts can be used to convert improvements in system performance into energy savings. For example, reflectors and/or higher-lumen lamps (such as 85-CRI T8 lamps or T10 lamps) can be installed to increase the system light output without changing the number of lamps in use. This increase in system light output can be balanced by a reduction in ballast output to save electricity with minimal effects on existing light levels.

New Luminaire Layouts: Where ceiling heights are low and low levels of illumination are specified, a wider spacing of luminaires is needed to achieve target illumination. In some cases, the required luminaire spacing with full-output ballasts will be so great that non-uniform illuminance will result. Reduced-wattage ballasts can provide the target illuminance without exceeding the luminaire's spacing criteria.

How are reduced-wattage electronic ballasts specified?

The light output from a lamp-ballast system is expressed by the **ballast factor** (BF). The BF is simply the percentage of the lamps' rated lumens that will be produced by the specified lamp-ballast system. Most magnetic ballasts have a BF in the range of 0.93–0.95. Electronic ballasts are available in a wide range of ballast factors. They can be purchased with a high BF (1.00–1.30) to boost light output, or a low BF could be specified (0.67–0.80). A full-output electronic ballast is defined as one with a BF of at least 0.85.



What are the impacts on savings and IRR?

Because most reduced-wattage electronic ballasts reduce energy consumption with little or no premium cost compared to standard-wattage electronic ballasts, both energy savings and IRR will be increased.

To demonstrate the benefits of choosing a reduced-wattage electronic ballast, *ProjectKalc* software was used to analyze two upgrades of a standard three-lamp T12 fluorescent system—one with full-wattage electronic ballasts, and another with reduced-wattage electronic ballasts. This analysis was performed on a typical office space illuminated with 2x4 fluorescent troffers.

With Full-Wattage Electronic Ballasts (BF = 0.88)	With Reduced-Wattage Electronic Ballasts (BF = 0.75)
• 33% energy savings	• 40% energy savings
• 32.9% IRR	• 38.3% IRR
• 93% relative light output	• 78% relative light output